

# Financing constraints of SMEs in developing countries

Beck, T.H.L.

*Published in:*
Financing innovation-oriented businesses to promote entrepreneurship

*Publication date:*
2007

# Financing Constraints of SMEs in Developing Countries: Evidence, Determinants and Solutions

Thorsten Beck*

**First draft: April 2007**
**This draft: May 2007**

***Abstract:*** This paper surveys empirical research that shows that small and medium enterprises (SMEs) are more constrained by financing and other institutional obstacles than large enterprises, exacerbated by the weaknesses in the financial systems of many developing countries. We use the concept of the access possibilities frontier to explain how difficulties in managing risk and transaction costs involved in SME lending makes financial institutions and markets so reluctant to reach out to this group of enterprises, especially in developing countries. We discuss different policies and reforms that can entice financial institutions and markets to lend to SMEs and comment on the role of the government in institution building, providing the regulatory framework and undertake market-friendly activist policies. However, we also point to pitfalls in government's involvement in SME financing.

Keywords: Small and Medium-Size Enterprises; Business Environment; Financing Constraints

JEL Classification: L11; O1; O4

* World Bank, Development Research Group. This paper is based on joint research with Aslı Demirgüç-Kunt and Augusto de la Torre and has benefited from the insights of many of my colleagues. It was prepared for the KDI conference on "Financing Innovation-Oriented Businesses to Promote Entrepreneurship." I would like to thank conference participants and Leora Klapper for helpful comments and suggestions and Edward El-Hussainy for excellent research assistance. This paper's findings, interpretations, and conclusions are entirely those of the author and do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent.

## 1. Introduction

Small and medium enterprises account for a large share of enterprises and a large share of overall employment in the private sector of most economies. Employment in enterprises with up to 250 employees constitutes over 60% of total employment in manufacturing in many countries (Figure 1), which justifies the statement that "SMEs are the emerging private sector in poor countries and thus form the base for private sector-led growth" (Hallberg, 2001). Cross-country evidence, however, also shows that small and medium enterprises are more constrained in their operation and growth than large enterprises and access to financial services features importantly among the constraints (Ayyagari, Demirgüç-Kunt and Maksimovic, 2006).

This paper summarizes recent empirical evidence on SMEs' financing constraints and patterns. While offering broad cross-country comparisons, it should be noted that this paper focuses mainly on developing and emerging markets. It offers a conceptual framework to understand why financial institutions in most countries are so reluctant to reach out to these enterprises and discusses different policies and reform that can increase SMEs' access to external finance. Based on this framework, the paper goes on to discuss government's role in enhancing access to finance, ranging from institution building over providing regulatory frameworks to market-friendly activist policies, while at the same time noting potential pitfalls in governments' attempts to enhance SMEs' access to credit.

Policy efforts targeted at SMEs have often been justified with arguments that (i) SMEs are an engine of innovation and growth, (ii) they help reduce poverty as they are more labor-intensive, but (iii) they are constrained by institutional and market failures.[1] While country-level and micro-economic studies have not provided conclusive evidence

[1] See Biggs (2002) for an overview.

on these arguments, recent cross-country evidence does not support the claim that countries with a larger share of SMEs in the manufacturing sector grow faster or see their poverty rates fall faster (Beck, Demirgüç-Kunt and Levine, 2005). Specifically, there does not seem to be any robust relationship between the share of small, medium or large enterprises and economic development. On the other hand, cross-country research has pointed to the institutional and business environment in which enterprises operate as an important factor for economic development. The business environment includes – among other elements - well-defined property rights, both between private parties and protection against government expropriation, effective contract enforcement, competitive product, labor and capital makers, and a legal framework that allows for relatively easy entry and exit of enterprises. Klapper, Laeven and Rajan (2006) show how different elements of the business environment affect economic growth through the entry of new firms. Specifically, high firm registration costs hamper new firm creation and growth, while property right protection and regulations fostering access to finance are conducive to firm creation and growth. The effect of policies might also explain the absence of a robust relationship between the size of the SME sector and growth, as a comparison between Italy and the UK illustrates. On the one hand, Italy has high registration costs and many old, inefficient and slow growing SMEs, while the UK with low entry barriers has firms that enter at a lower scale than in Italy but grow more rapidly (Figure 2).

Taking together, this implies the policy focus shifting away from size-oriented policies towards policies that level the playing field between firms of different sizes and allow for entry of new enterprises. While small firms suffer more from financing and other constraints than large firms, it is not size itself that justifies intervention, but rather

the potential of small firms to grow into medium and large enterprises and to contribute to the economy and the fact that institutional and market failures create an uneven playing field between firms of different sizes. As we will argue below, the focus should therefore be both on reforms of the business environment that affect all enterprises and foster entrepreneurship (Klapper and Quesada-Delgado, 2007), but also on policies that can help SMEs overcome financing constraints particular to their firm size and risk. The focus should be less on subsidies to small enterprises per se.

The remainder of this paper is structured as follows. Section 2 summarizes recent empirical evidence on SMEs' financing constraints and patterns. Section 3 offers a conceptual framework to understand why financial institutions are reluctant to reach out to SMEs. Section 4 uses this framework to discuss policies to overcome these constraints and section 5 discusses in detail government's role. Section 6 concludes.

## 2. SMEs' financing constraints – the evidence[2]

Access to and cost of finance is often ranked as one of most constraining feature of the business environment by SMEs (Figure 3). Specifically, the cost of finance is rated by over 35% of small and medium enterprises as major growth constraint in a sample of 71, mostly developing, countries, more than any other characteristic of the business environment, including tax rates and macroeconomic instability, also rated by many SMEs as major growth constraints. Access to finance is rated as major constraint by around 30% of small and medium enterprises, a similar proportion as economic policy uncertainty and corruption. Further, financing is one of the few characteristics of the business environment that – together with crime and political instability - is robustly

[2] This section builds on Beck and Demirgüç-Kunt (2006).

linked to firm growth, while other features have at most an indirect effect on firm growth (Ayyagari, Demirgüç-Kunt and Maksimovic, 2006).

Small firms consistently report higher financing obstacles than medium and large enterprises (Beck, Demirgüç-Kunt, Laeven and Maksimovic, 2006). Smaller, younger and domestic- (as opposed to foreign-owned) enterprises report higher financing obstacles even after controlling for other firm characteristics. The relationship is not only statistically but also economically significant. The probability that a small firm lists financing as a major obstacle (as opposed to moderate, minor or no obstacle) is 39% compared to 36% for medium-size firms and 32% for large firms.

The higher financing obstacles reported by small as compared to large firms are also reflected in financing patterns (Figure 4). While small firms finance less than ten percent of their investment needs with bank finance, large firms finance more than 20% with bank credit. Large firms have a similar, through not as strong, advantage, in trade credit and development finance, while small firms seem to finance a larger of investment with equity and informal finance, compared to large firms. Small firms also finance a significantly larger share of their new investment with internal resources than large firms. Further, small firms are less likely to use bank finance and other sources of external finance (Figure 5). While 30% of large firms use bank finance to finance new investment, only 12% of small firms do.

Small firms do not only report higher financing obstacles, they are also more adversely affected by these obstacles. As shown in Figure 6, small firms' financing obstacles have almost twice the effect on their growth that large firms' financing obstacles do (Beck, Demirgüç-Kunt and Maksimovic, 2005). The difference between

small and large firms is at least as big or even bigger for some of the specific financing obstacles, such as collateral requirements, bank paperwork, interest rate payments, the need for special connections and banks' lack of lending resources. Also the lack of access to specific forms of financing such as export, leasing and long-term finance is significantly more constraining for small firms' growth than for large firms' growth.

Quasi-natural experimental evidence confirms the importance of credit constraints for firm growth. Banerjee and Duflo (2004) analyze detailed loan information on 253 Indian SMEs' before and after they became eligible for a directed subsidized lending program and find that the additional credit resulted in a proportional increase in sales rather than a substitution for other non-subsidized credit, indicating that these firms were credit constrained before receiving subsidized credit. Similarly, Zia (2007) finds that small non-listed and non-group firms in Pakistan reduce their sales after they become ineligible for subsidized export credit, indicating the existence of credit constraints; in contrast, large, listed and group firms do not reduce their sales after losing access to subsidized credit. It should be stressed that this evidence does not support subsidized credit as a means to alleviate small firms' credit constraints – a topic to which we will return below -, but they show that small firms are constrained by their lack of access to external finance.

Recent research also shows the importance of the business environment for firms' financing constraints and patterns. Beck, Demirgüç-Kunt, Laeven and Maksimovic (2006) show that institutional development, measured very broadly, is the most robust country-characteristic predicting cross-country variation in firms' financing obstacles, even after controlling for cross-country differences in GDP per capita. Firms in countries

with higher levels of institutional development report significantly lower financing obstacles than firms in countries with less developed institutions. The positive effect of financial and institutional development can also be observed in the use of external finance. Better protection of property rights increases external financing of small firms significantly more than it does for large firms, particularly due to the differential impact it has on bank and supplier finance (Beck, Demirgüç-Kunt and Maksimovic, 2004b).

Financial and institutional development helps create a level playing field between small and large firms, while the lack of an effective financial system explains the phenomenon of the missing middle observed in many developing countries. Beck, Demirgüç-Kunt and Maksimovic (2005) show that the effect of growth obstacles on firm growth is smaller in countries with better-developed financial and legal systems. The effect of financial and legal development on the constraints-growth relationship is significantly stronger for small firms than for large firms. Financial and institutional development thus helps close the gap between small and large firms. This is also confirmed by more detailed country comparisons. For example, Sleuwaegen and Goedhuys (2002) show that smaller firms grow relatively faster in Germany than in Côte d'Ivoire, while the opposite holds for large firms. Using cross-industry, cross-country data for 44 countries and 36 industries in the manufacturing sector, Beck, Demirgüç-Kunt, Laeven and Levine (2005) show that financial development exerts a disproportionately large positive effect on the growth of industries that are naturally composed of more small firms. Their results suggest that the furniture industry (an industry with many small firms) should grow 1.4% per annum faster than the spinning industry (an industry with relatively few small firms) in Canada (a country with a well

developed financial system) than in India (which has a low level of financial development). Since the average industry growth rate in their sample is 3.4%, this is a relatively large effect. This suggests that financial market development helps small firms more than large firms overcome financial market frictions thus leading to a more level playing field between firms of different sizes.

The constraining effect of financial and institutional underdevelopment also shows up in a distorted size distribution. Kumar, Rajan and Zingales (1999) find that the average size of firms in human capital-intensive and R&D intensive industries is larger in countries with better property rights and patent protection. Similarly, Beck, Demirgüç-Kunt and Maksimovic (2006) show in a cross country sample that large firms, i.e. firms that are most likely to be able to choose the boundaries of the firm, are larger in countries with better-developed financial and legal systems. Finally, Aghion, Fally and Scarpetta (2007) find for a sample of European countries that financial development enhances new firm entry in sectors that depend more heavily on external finance and that the smallest size firms benefit the most in terms of higher entry from higher financial development. They also show that financial development promotes the post-entry growth of firms in sectors that depend more on external finance. These results suggest that agency problems between outside investors and corporate insiders keep firms smaller in countries with weak legal and financial systems. Firms thus stay smaller in countries with underdeveloped financial and legal systems. On the other hand, access to financial services can help new entrepreneurs survive beyond the first year, as evidence from Bosnia shows (Demirgüç-Kunt, Klapper and Panos, 2007) and can help enterprises innovate at a faster rate (Ayyagari, Demirgüç-Kunt and Maksimovic, 2007)

## 3. SMEs' financing constraints – a conceptual framework[3]

The empirical evidence that financing constraints and access to external finance are inversely correlated with firm size matches theoretical models that use fixed transaction costs and information asymmetries and the resulting agency problems as basis for financial market frictions (see Levine, 2005 for an overview). In the following, we will build on this theoretical literature and the empirical evidence to derive a conceptual framework explaining SMEs' financing constraints and thus set the basis for the policy discussion of the next section.

Transaction costs and information asymmetries drive the variation in access to finance across firms of different sizes. Take first transaction costs. Fixed transaction costs in credit assessment, processing and monitoring result in decreasing unit costs as the size of the loan increases. These fixed transaction costs exist at the transaction, client, institution and even financial system level. Assessing an individual loan request entails costs that are at least partially independent of the loan amount. Maintaining a client relationship over time and across different financial products, including loan, deposit and savings services, implies costs that are partly orthogonal to the number and amount of financial transactions with the client. At the level of the financial institution, fixed costs range from brick-and-mortar branch installations over computer system to legal services and are again partly independent of the number of clients or the size of their loans. Fixed costs might even arise on the financial system level in the form of regulatory costs and the costs of payment and settlement systems, which are up to a point independent of the number of transactions, clients and institutions in the system.

[3] This section builds on Beck and de la Torre (2007).

These fixed transaction costs drive a wedge between funding costs of financial institutions and the lending rate they charge borrowers. In a world of uncertain returns on investments, higher transaction costs and the resulting higher lending costs can increase the likelihood that borrowers cannot pay due to too high of a repayment burden. Rather than increasing the interest rate to the market clearing rate, financial institutions might ration at a lower interest rate than the market equilibrium rate because higher interest rates would lead to lower expected repayments (Williamson, 1987). High transaction costs do therefore not only increase the cost of borrowing, but can also restrict access to external finance for some borrower groups.

While transaction costs are restraining for all borrowers, there are arguments that they are even more constraining for small and medium enterprises. Their diverse characteristics and their relative opaqueness increases assessment and monitoring costs. Unlike other credit categories, such as consumer credit or mortgage lending, SME lending is still considered a high-cost lending product. More specifically, unlike other lending products that can be reduced to simple transactions, SME lending often still depends heavily on relationships between borrowers and lenders (Berger and Udell, 1998, 2006).

In addition to transaction costs, the outreach to small and medium enterprises is constrained by default risk. Default risk can be either borrower-specific or systemic. In the following, we will focus on the borrower-specific risk and more specifically on risks arising from asymmetric information between borrower and lenders. If the debtor is privy to information about her project or her effort and the lender may only secure this information at a prohibitively high cost, this can lead to two different sources of risk:

adverse selection and moral hazard. Adverse selection refers to difficulties of choosing good credit risks ex-ante, while moral hazard refers to the inability of the lender of effectively enforcing the agreed credit contract ex-post. Although such risk can be compensated by increasing the interest rate, this would increase adverse selection and moral hazard. As the interest rate rises, this will attract riskier borrowers to the pool and will entice borrowers to undertake riskier project with a higher probability of default. The impossibility to use interest rates as screening technology entices lenders to use non-interest screening devices such as collateral, warrants or assessment based on audited information. In its ultimate consequence, however, lenders will ration credit rather than allow the interest rate to rise to the market-clearing level, as first shown by Stiglitz and Weiss (1981).

To illustrate the non-linear relationship between interest rates and credit supply due to transaction costs and agency problems, Figure 7 plots the nominal interest rate i and the return for the lender r. In a world with costs and risks, the two would be identical as illustrated by the 45% line. In a world of transaction costs and agency problems, however, there is an increasing wedge between nominal interest rate and return. As i increases, there is a higher default probability and the return to the lender therefore increases at a decreasing rate. Similarly, as i increases, the borrower pool becomes riskier, which again results in a higher default probability. Eventually, the marginal benefit of an interest rate increase due to higher revenues is equal to the marginal costs due to higher default and at higher nominal interest rates, the return to the lender decreases.

As in the case of transaction costs, SME lending is more affected by the inability to manage risks than other lending products. Compared to large firms, SMEs are commonly more opaque, less likely to be able to post collateral and often do not have audited financial statements that allow a better picture of the enterprise and its projected profits. These features of the SME lending market make the curve in Figure 7 flatter and the flexion point lower than in other lending markets.

Lenders must develop loan technologies that enable them to choose such SMEs that, for any given lending interest rate, will yield the highest risk-adjusted expected net return. To select such debtors, the creditor must compare: (i) the all-in costs of lending to different debtors/projects; (ii) the differences in expected returns (capacity to pay) across such debtors/projects that the lender considers to be equally risky; and (iii) the differences in risks and willingness to pay across such debtors/projects that the lender considers to be of equal expected returns (or capacity to pay). The scope for optimization that the lender will have in managing lending costs and risks will be constrained by state variables, such as the contractual and informational frameworks, macroeconomic environment, technology and other characteristics of the business environment in which both lender and borrower operate, such as physical infrastructure, crime and political instability. These state variables are not only outside the reach of lenders' actions, but neither can they be changed in the short-run by policy makers. The weaker these state variables, the flatter the curve in Figure 7 and the less the maneuvering room for credit supply optimization. Given the constraints, a prudent lender will rather not offer loans at a higher interest rate if she is not reasonably sure of her ability to appropriately measure costs, sort out risks for a given expected return, and identify expected returns for a given

risk. However, there is also the possibility that lenders will not maximize their lending opportunities to SMEs given by the state variables. On the other extreme, lenders might act imprudently and lend more to SMEs than sustainable under the current state variables.

Using the concept of state variables allows us to define the Access Possibilities Frontier for SME lending as a rationed equilibrium, i.e. the maximum share of viable loan applicants that could be served by financial institutions prudently given the existing state variables.[4] To derive the frontier and thus the bankable share of loan applicants, we have to take into account both demand and supply side factors, while holding the state variables constant. The demand for loanable funds is a positive function of expected returns on investible projects and a negative function of the lending interest rate and voluntary self-exclusion. By enabling debtors to seek resources for risky projects that they would not undertake with their own money, the option to borrow gives rise to the problems of adverse selection and moral hazard discussed above, which can result in an imprudently high loan demand. While the loan supply is thus a positive function of the nominal lending interest rate, this relationship is non-linear and might turn negative beyond a threshold. Lenders will thus not satisfy all the loan demand but rather ration it at an interest rate below the market-clearing rate. This is an inevitable cost of prudence in a world of uncertainty and agency problems—some "good" debtors *have* to be left out in order to minimize the set of "bad" debtors that are let in. In statistical terms, this is the trade-off between type I and type II errors.

The Access Possibilities Frontier, however, is not time-invariant, as the example of technology shows. The increasing use of IT in lending reduces processing costs and

[4] While we derive the Access Possibilities Frontier for SME lending, this concept can also be applied to other lending products and markets. See Beck and de la Torre (2007) for a more detailed discussion.

thus overall transaction costs related to lending, but can also improve risk management, through the introduction of credit scoring (Berger, Frame, and Miller 2005; Frame, Padhi and Woosley, 2004; Frame, Srinivasan and Woosley, 2001).

Given costs and risks and demand-side constraints, we can use the Access Possibilities Frontier to identify several types of access to credit problems. A first type of access problem is demand-originated and consists in too low a number of loan applicants simply because of self-exclusion resulting from cultural barriers or financial illiteracy. Alternatively, there could be a lack of profitable investment projects in the economy that deserve financing based on their expected return. A second type of access problem can arise due to supply sub-optimization that leads to credit markets settling at a point below the Access Possibilities Frontier. This can reflect, for instance, regulatory distortions or insufficient contestability that cause lenders not to fully exploit all the outreach opportunities, given the state variables. A third and very different access problem is associated with "excess access," that is, an equilibrium above the Access Possibilities Frontier with loans being granted to a larger share of loan applicants than is prudently warranted, given the lending interest rate and the state variables. A final access problem consists of too low a prudent Access Possibilities Frontier due to deficiencies in state variables compared to countries with similar levels of economic development.

Each of these access problems calls for different policies. The first type of problems calls for demand-side measures that educate and encourage the healthy use of financial products by SMEs. A problem of profitable investment projects, on the other hand, has to be addressed through non-financial sector policies and is primarily not a problem of access to finance. The second problem calls for interventions and policies

that encourage financial institutions to maximize outreach to SMEs given the contractual and macroeconomic environment, while the third problem calls for restraining measures. The final set of policies are general reforms of the business environment and institutional framework that are not specific to the SME lending market. We will discuss these different policies in the next section.

## 4. SMEs' financing constraints – policies

The Access Possibilities Frontier derived in the previous section allows us to discuss different policies to alleviate SMEs' financing constraints. Specifically, we will distinguish between market-developing policies that will help push out the frontier, market-enabling policies that push incumbent and new financial institutions towards the existing frontier and market-harnessing policies that prevent the financial system to move beyond the frontier towards a point of financial fragility. Let us discuss each in turn.

*Market developing policies* aim at improving the state variables and include reforms in the contractual and informational frameworks and macroeconomic performance. As discussed above, while these reforms are not specific to the SME lending market, they will help level the playing field between small and large enterprises. The results of such reforms can take a long-time; nevertheless they are indispensable in order for the financial system to reach a higher sustainable equilibrium and be able to provide SMEs with the necessary financial services in a commercially viable manner.

High lending interest rates may reflect doubts about fiscal solvency and a history of asset confiscation or inflation volatility, and will be often associated with crowding out of private investment due to the absorption by the government of a large share of

society's financial savings. This crowding out will especially hurt small and medium enterprises that unlike large and multinational enterprises do not have recourse to alternative finance providers. Under such circumstances, the appropriate policies to foster access to credit would be those that aim at enhancing the resiliency of fiscal solvency and at establishing a credible record of low and stable inflation.

A shallow credit market with low access may also result from major shortfalls in the contractual and informational frameworks (Beck and Levine, 2005). The appropriate policies in this case would span a wide range: from titling of land property to the upgrading of laws affecting collateral repossession or execution of guarantees; from the modernization of corporate reorganization and bankruptcy proceedings to improvements in the functioning of the judiciary; from raising accounting and disclosure standards to establishing the appropriate legal framework and right incentives for the development of credit registries.

Changes in the state variables involve changes in fundamental institutions and can take a long time to materialize. To the extent that a financial system is operating below the possibilities frontier, there is room for *market-enabling policies* that may foster the broadening of access even in the absence of perceptible changes in state variables. Where the lack of profitable, credit-deserving investment projects is the main problem, non-financial sector policies are called for. Where the main reason for being below the possibilities frontier is the demand problem of self-exclusion, the appropriate policies would emphasize raising financial literacy. If – as is more likely - the main problems reside with sub-optimization in credit supply, by contrast, a wider range of policy options can be considered, starting with competition policy.

While theory and some empirical work suggest that market power might entice banks to invest in long-term relationships with small and opaque enterprises as they know that they can regain the initial investment in the relationship at a later stage (Petersen and Rajan, 1995; Bonaccorsi di Patti and Dell'Ariccia, 2004), other empirical papers point to the healthy effect of competition on availability of lending to SMEs (Cetorelli and Strahan, 2004; Beck, Demirgüç-Kunt and Maksimovic, 2004a).[5] Complicating the debate is that market structure, as for example measured by concentration ratios, is not the same as competitiveness, which is also influenced by the segmentation and contestability of a market (Claessens and Laeven, 2004). Further, state variables such as the contractual and informational frameworks can influence the competitiveness of a financial system through the ability to transfer collateral easily from one lender to another and the ability of SMEs to build up reputation capital through a credit registry.

There is mixed evidence concerning the effect of foreign bank entry on SME lending. On the one hand, firm-survey evidence suggests that firms report lower financing obstacles in countries with a higher share of foreign banks, a finding that holds across different size groups of firms. (Clarke, Cull, and Martinez Peria, 2006). This positive effect can be a direct or an indirect one. Foreign banks can bring the necessary know-how and scale to introduce new transaction lending techniques. By competing with domestic banks for large corporate clients, they can also force domestic banks to go down market to cater to SMEs (de Haas and Naaborg, 2005). On the other hand, bank-level information from specific countries suggests that foreign banks are less likely to lend to small and opaque companies than domestic banks (Mian, 2006; Gormley, 2006). So, any

[5] See Berger et al. (2004) for an overview

positive effect of foreign bank entry on SME lending seems to be more indirect than direct.

Regulatory policies can be important to push the system towards the frontier of SME lending. Regulatory frameworks that enable leasing and factoring – traditional SME lending products – have featured prominently on the agenda. Leasing is an attractive financing tool for SMEs as it is based on the cash flow of the financed asset, such as machinery or vehicle, rather than reputation of the enterprise or the asset base of the enterprise, it often includes tax advantages, and it allows for easier recovery if the correct legal framework is in place. Factoring, the discounting of sales receivables, is attractive for small suppliers of large credit-worthy buyers, as it does not rely on information about the "borrower", but rather on the obligor (Klapper, 2006). Both leasing and factoring rely on a legal framework governing these transactions, but rely to a lesser extent on the contractual framework of a country, so that they can be help push a financial system towards the frontier of SME lending, even if this frontier is low. Both transaction forms can also benefit a lot from electronic registration systems and electronic security laws, which will allow electronic processing and therefore reduction of transaction costs (Klapper, 2006, 2007).

Loan classification and provisioning rules can also affect SMEs' access to finance, through reliance less on collateral than on forward-looking assessment of payment performance. Further, Adasme, Majnoni and Uribe (2006) show that SME lending might require more provisioning but less capital, given that the distribution of losses from small loans is less skewed than that for large loans. Another regulatory issue

is the equal taxation of financial products that are offered by different financial institutions, thus creating a competitive even playing field.

A third group of policies, which we define as *market-harnessing*, try to prevent the financial system from moving to an unsustainable equilibrium beyond the frontier due to imprudent lending. Such imprudent lending binges can arise from the same competition that market-enabling policies try to foster if not accompanied by a proper defined regulatory and supervisory framework. Indiscriminate free entry for new deposit-taking credit institutions or the intensification of competition among incumbent institutions can lead to widespread fragility, especially in the context of implicit or explicit government guarantees, poor accounting and disclosure practices, deficient early warning system and prompt corrective action regimes, and dysfunctional failure resolution frameworks. Market-harnessing policies therefore aim at keeping banks' incentives to take aggressive risks in check through a mix of measures aimed at strengthening market and supervisory discipline. The absence of too generous deposit insurance – implicit or explicit – and disclosure and transparency requirements give large creditors and depositors incentives and possibilities to monitor and discipline banks. In addition, market signals in the form of deposit interest rates, yields on subordinated debt or equity prices of publicly listed banks moving in response to risk taking and performance of banks provide additional information to bank supervisors and should be coupled with effective official intervention into institutions that the market has identified as weak. Summarizing, policy makers have to strike a fine balance between market-enabling policies that push financial institution towards the frontier and market-

harnessing policies that prevent them from moving beyond the frontier, with the balance varying from country to country.

## 5. SMEs' financing constraints – the role of government

The different policies discussed in the previous section seem to call for an important role of the government in the "SME-Access to Finance" debate. But what exactly government's role is, is still subject to discussion. While research has been able to identify which government interventions have not worked over the past decades in the SME lending market, researchers are still struggling to define exactly, which policies can work under which circumstances. There is a trade-off between market failures and government failures, the tendency to remedy market failures through government interventions, which then in turn can lead to government failures. In the following we will discuss different areas of government intervention, but would like to emphasize that this is an area still being researched, with no standard answers for all countries and markets and no pre-designed policy packages ready to be taken off the shelf. What works in one country, might not work in others; a context-sensitive approach that takes into account country circumstances, is therefore called for (Honohan and Beck, 2007). Where government intervention is involved, the strength of governance arrangements might be an important factor to be taken into account.

Least controversial is the role of government in providing the contractual and informational framework and ensuring a stable macroeconomic environment. Government is the natural provider of key institutions such as legislation and court systems. Similarly, given the government's monopoly over the issue of monetary

instruments, ensuring macroeconomic stability is a natural government task. As discussed above, it is through these policies that the government can help push outwards the Access Possibilities Frontier and ensure a long-term sustainable increase in SMEs' access to finance. While these business environment reforms do not focus specifically on SMEs, they help close the gap between firms of different sizes and level the playing field. Through these policies the government helps develop markets that can then be used by financial institutions to reach out to SMEs.

However, these markets are not always used and the financial system is likely to settle at an equilibrium below the frontier, which raises the question on government's involvement in ensuring that the system moves towards the frontier. We already discussed market-enabling policies, such as providing regulatory frameworks for leasing and factoring and fostering competition. Some of these policies might require more active government involvement. Improving the informational framework through the introduction of a credit information bureau is a specific area where government might have to step in. While banks might be interested in establishing systems to share negative information, incumbent financial institutions might be less interested in sharing positive information. On the other hand, positive information sharing allows SMEs to build up reputation collateral and thus fosters competition. Overcoming banks' opposition to share positive information can enhance the contestability of a financial system and might be an area where governments have to take a pro-active role.

Beyond targeting competition per se, governments can also try produce a movement towards the possibilities frontier by addressing hindrances such as coordination failures, first mover disincentives, and obstacles to risk distribution and

sharing. While not easy to define in general terms, given their variety, these government interventions tend to share a common feature in creating incentives for private lenders and investors to step in, without unduly shifting risks and costs to the government (de la Torre, Gozzi and Schmukler, 2006). Three examples illustrate this approach. One is the creation by NAFIN (a Mexican development bank) of an internet-based market, which allows small suppliers to use their receivable from large credit-worthy buyers to receive working capital financing (Klapper, 2006). Another example is the Chilean program (FOGAPE) to promote lending to SMEs via the auctioning of partial government guarantees (Benavente, Galetovic, and Sanhueza, 2006). Finally, the Mexican development fund FIRA has brokered a variety of structured finance packages to finance agricultural production (e.g., shrimp, corn) to realign credit risks with the pattern of information between financial institutions and different participants in the supply chains of these agricultural products (de la Torre, Gozzi and Schmukler, 2006). While intriguing examples, it is not for sure whether risk is really not being shifted to government and taxpayers through such interventions and whether these interventions have sunset clauses that will allow the government to withdraw once its engagement is not needed anymore. There are also governance concerns stemming from a government intervention in a private market. Finally, from political economy viewpoint, such schemes might take away the pressure to implement the long-term institution building that is necessary to push out the frontier and expand SME lending sustainably in the long-term.

Partial credit guarantee (PCG) schemes feature prominently among market-activist policies.[6] While they also exist on a private basis, governments and donors have been aggressively pushing for their establishment to overcome the limited access to bank credit SMEs face. By providing a guarantee, such as scheme can help overcome the lack of collateral of most SMEs, but issues of appropriate pricing, funding and the institutional structure are important. While such schemes could be run on a self-sustainable basis, they often involve significant subsidies and contingent fiscal liabilities to cover losses. While it is difficult to compute such costs ex-ante, it is even more difficult to measure the benefits, which would be partially captured by additionality, i.e. the share of borrowers that would not have gained access to finance if it were not for the PCG. An even more accurate measure would be the extent to which borrowers that would have gotten access to credit in a world without market frictions, could access the credit market due to PGCs, minus the extent to which borrowers gained access through the PCG that would not have gotten access in a friction-free world. Ultimately, the cost of any government intervention has to take into account the return on each dollar of taxpayer's money in such an intervention compared to other interventions, including interventions outside the financial sector.

While the government often does not intervene directly in the market in the case of most PCG schemes – if credit assessment and monitoring is still left with the banks -, the past forty years have seen many examples of *market-substituting* policies to foster SME lending, with the result balance tipping heavily into the negative. Such policies include directed credit, often combined with interest rate subsidies, and the establishment of development finance institutions focused on SME lending. These policies share the

[6] For an overview of the literature on PCGs, see World Bank (2007).

problems of all government-managed financial sector programs – the trade-off between commercial and social goals results in high losses and non-sustainability of many of these programs. Undercutting market conditions results in crowding out of private providers, even where the latter would be willing to enter due to changes in the general business environment or due to technological advances. Political subversion of these programs often leads to corruption and channeling of funds to political cronies or to specific electoral groups (Cole, 2004; Dinc, 2005; Khwaja and Mian, 2005).

## 6. Conclusions

This paper surveyed empirical research on SMEs' financing constraints and patterns. A conceptual framework showed that transaction costs and asymmetric information between borrower and lender are the driving factors explaining the limited access to external finance by many SMEs in developing as well as developed economies. This conceptual framework allowed us to distinguish between market-developing policies such as reforming the contractual and informational framework, market-enabling policies such as fostering competition and providing regulatory frameworks for leasing and factoring and market-harnessing policies such as the financial safety net that prevent imprudent lending booms and busts. Government has an important role in reforming the institutional environment, providing regulatory frameworks and fostering competition. International experience, however, has shown the wide-spread failure of government-owned or –managed financial institutions focusing on specific borrowers groups or directed lending programs. Less clear is the role of government in intervening through activist policies, such as credit guarantee schemes.

There is a broad research agenda going forward to better understand SMEs' financing needs in developing and emerging economies. First, it is important to better understand SME lending practices by financial institutions and identify best practices. Even more important, however, is it to understand how these practices depend on the business environment in which the financial institutions operate. Efforts are under way using bank-level surveys and interviews (De la Torre, Martinez Peria and Schmukler, 2007; Beck, Demirgüç-Kunt and Martinez Peria, 2007). Second, while we have focused mainly on the banking system – driven by the observation that banks still constitute the largest component of financial systems in the financial system of most developing and emerging markets – the role of non-bank financial institutions and financial markets, both on the debt and the equity side, has to be explored in more detail. Third, the role of technology in expanding SMEs' access to financial services has been little explored. While the introduction of credit scoring has been shown to expand SME lending in the U.S., it is not clear whether this technology can be easily applied to developing countries (Miller and Rojas, 2004). By enabling more cost-effective consumer lending, technological advances such as credit scoring or alternative delivery channels such as electronic or mobile finance, might push lenders out of the SME lending market, thus even exacerbating SMEs' financing constraints. Fourth, case studies on market-friendly activist government interventions have been undertaken, but a more rigorous impact evaluation is necessary, such as has been started for microfinance institutions (World Bank, 2007). Finally, future research will also try to understand better the impact of the institutional structure, funding and pricing of partial credit guarantee schemes on SMEs'

access to finance (Beck, Klapper and Mendoza, 2007). Such research is necessary to inform policy makers about the costs and benefits of different interventions.

## References


Adasme, Osvaldo, Giovanni Majnoni and Myriam Uribe. 2006. "Access and Risk: Friends or Foes? Lessons from Chile." World Bank Policy Research Working Paper 4003.

Aghion, Philippe, Thibault Fally and Stefano Scarpetta. 2007. "Credit Constraints as a Barrier to the Entry and Post-Entry Growth of Firms." Mimeo.

Ayyagari, Meghana, Thorsten Beck, and Aslı Demirgüç-Kunt. 2007. "Small and Medium Enterprises across the Globe: A New Database." Small Business Economics, forthcoming.

Ayyagari, Meghana, Aslı Demirgüç-Kunt and Vojislav Maksimovic, 2006. "How Important Are Financing Constraints? The Role of Finance in the Business Environment." World Bank Policy Research Working Paper 3820.

Ayyagari, Meghana, Aslı Demirgüç-Kunt and Vojislav Maksimovic, 2007. "Firm Innovation in Emerging Markets: Role of Governance and Finance." World Bank Policy Research Working Paper 4157.

Banerjee, Abhijit V. and Esther Duflo. 2004. "Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program." CEPR Discussion Paper 4681.

Benavente, Jose Miguel, Alexander Galetovic and Ricardo Sanhueza. 2006. "Fogape: An Economic Analysis." World Bank mimeo.

Beck, Thorsten and Augusto de la Torre. 2007. "The Basic Analytics of Access to Financial Service," Financial Markets, Institution and Instruments 17, 79-117.

Beck, Thorsten and Aslı Demirgüç-Kunt. 2006. "Small and Medium-Size Enterprises. Access to Finance as Growth Constraint," Journal of Banking and Finance 30, 2931-43.

Beck, Thorsten, Leora Klapper and Juan Carlos Mendoza. 2007. "Partial Credit Guarantees around the World." World Bank mimeo.

Beck, Thorsten and Ross Levine. 2005. "Legal Institutions and Financial Development." In: Menard, Claude and Mary Shirley (eds.), Handbook of New Institutional Economics. Kluwer Dordrecht.

Beck, Thorsten, Aslı Demirgüç-Kunt, Luc Laeven, and Ross Levine. 2005. "Finance, Firm Size, and Growth." World Bank Policy Research Working Paper 3485.

Beck, Thorsten, Aslı Demirgüç-Kunt, Luc Laeven and Vojislav Maksimovic. 2006. "The Determinants of Financing Obstacles." Journal of International Money and Finance, 25, 932-52.

Beck, Thorsten, Aslı Demirgüç-Kunt, and Ross Levine. 2005. "SMEs, Growth, and Poverty: Cross-Country Evidence," Journal of Economic Growth 10, 197-227.

Beck, Thorsten, Aslı Demirgüç-Kunt, and Vojislav Maksimovic. 2004a. "Bank Competition and Access to Finance: International Evidence." Journal of Money, Credit and Banking 36, 627-48.

Beck, Thorsten, Aslı Demirgüç-Kunt, and Vojislav Maksimovic. 2004b. "Financing Patterns Around the World: Are Small Firms Different?" World Bank Mimeo.

Beck, Thorsten, Aslı Demirgüç-Kunt, and Vojislav Maksimovic. 2005. "Financial and Legal Constraints to Firm Growth: Does Firm Size Matter?" Journal of Finance 60, 137-177.

Beck, Thorsten, Aslı Demirgüç-Kunt, and Vojislav Maksimovic. 2006. "The Influence of Financial and Legal Institutions and Firm Size." Journal of Banking and Finance 30, 2995-3015

Beck, Thorsten, Aslı Demirgüç-Kunt, and Maria Soledad Martinez Peria. 2007. "Barriers to SME Lending around the World." World Bank mimeo.

Berger, Allen N., Scott Frame and Nathan Miller. 2005. "Credit scoring and the availability, price, and risk of small business credit." Journal of Money, Credit, and Banking 37, 191-222.

Berger, Allen N. and Gregory F. Udell. 1998. "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle." Journal of Banking and Finance 22, 613-673.

Berger, Allen N. and Gregory F. Udell. 2006. "A More Complete Conceptual Framework for SME Finance". Journal of Banking and Finance 30, 2945-66.

Berger, Allen, Aslı Demirgüç-Kunt, Joseph Haubrich and Ross Levine. 2004. "Bank Concentration and Competition: An Evolution in the Making". Journal of Money, Banking and Credit 36, 433-53.

Biggs, Tyler. 2002. "Is Small Beautiful and Worthy of Subsidy? Literature Review." IFC mimeo.

Bonaccorsi di Patti, Emilia and Giovanni Dell'Ariccia. 2004. "Bank Competition and Firm Creation." Journal of Money, Banking and Credit 36, 225-51.

Cetorelli, Nicola and Philip E. Strahan. 2004. "Finance as a Barrier to Entry: Bank Competition and Industry Structure in Local U.S. Markets." Federal Reserve Bank of Chicago Working Paper.

Claessens, Stijn and Luc. Laeven. 2004. “What drives bank competition? Some international evidence.” Journal of Money, Credit, and Banking 36, 563-583.

Clarke, George, Robert Cull, and Maria Soledad Martinez Peria. 2006. “Foreign Bank Participation and Access to Credit Across Firms in Developing Countries.” Journal of Comparative Economics 34, 774-795.

Cole, Shawn. 2004. “Fixing Market Failures or Fixing Elections?: Agricultural Credit in India.” MIT mimeo.

De Haas, Ralph and Ilko Naaborg. 2005. “Does Foreign Bank Entry Reduce Small Firms’ Access to Credit? Evidence from European Transition Economies.” De Nederlandsche Bank Working Paper 50.

De la Torre, Augusto, Maria Soledad Martinez Peria and Sergio Schmukler. 2007. “Bank Lending to SMEs.” World Bank mimeo.

De la Torre, Augusto, Juan Carlos Gozzi. and Sergio Schmukler. 2006. “Innovative Experiences in Access to Finance: Market Friendly Roles for the Visible Hand.” Latin America Regional Study. World Bank.

Demirgüç-Kunt, Aslı, Leora Klapper and Georgios Panos. 2007 “The Origins of Self-Employment.” World Bank mimeo.

Dinç, Serdar. 2005. “Politicians and Banks: Political Influences on Government-Owned Banks in Emerging Countries.” Journal of Financial Economics 77: 453-479.

Frame, Scott, Michael Padhi and Lynn Wollsey. 2004. “The Effect of Credit Scoring on Small Business Lending.” Financial Review 39, 34-54.

Frame, W. Scott, Aruna Srinivasan, and Lynn Woosley. 2001. “The Effect of Credit Scoring on Small Business Lending,” Journal of Money, Credit, and Banking, 33, 813-825.

Gormley, T., A., 2006. “Banking Competition in Developing Countries: Does Foreign Bank Entry Improve Credit Access?” Washington University in St. Louis. Mimeo.

Hallberg, Kristin. 2001. “A Market-Oriented Strategy For Small and Medium-Scale Enterprises.” IFC Discussion Paper # 48.

Honohan, Patrick and Thorsten Beck. 2007. Making Finance Work for Africa, World Bank.

Khwaja, Asam Ijaz and Atif Mian. 2005. “Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market.” Quarterly Journal of Economics 120 1371-1411.

Klapper, Leora. 2006. “The Role of “Reverse Factoring” in Supplier Financing of Small and Medium Sized Enterprises,” Journal of Banking and Finance 30, 3111-30.

Klapper, Leora. 2007. ”Factoring Environment around the World.” World Bank mimeo.

Klapper, Leora, Luc Laeven, and Raghuram Rajan. 2006. “Entry Regulation as a Barrier to Entrepreneurship,” Journal of Financial Economics, 82, 591-629.

Klapper, Leora and Juan Miguel Quesada Delgado. 2007. “Entrepreneurship and Economic Development: Methodology and Results.” World Bank mimeo.

Kumar, Krishna, Raghuram Rajan and Luigi Zingales.1999. “What Determines Firm Size?” NBER Working Paper #7208.

Levine, Ross 2005. “Finance and Growth: Theory and Evidence.” In: Aghion, P and Durlauf, S. (eds.), Handbook of Economic Growth. Elsevier Science. The Netherlands.

Love Inessa and Nataliya Mylenko. 2003. “Credit Reporting and Financing Constraints.” World Bank Policy Research Working Paper 3142.

Mian, Atif. 2006. “Distance Constraints: The Limits of Foreign Lending in Poor Economies.” Journal of Finance 61, 1465-1505.

Miller, Margaret and Dina Rojas. 2004. “Improving Access to credit for SMEs: An Empirical Analysis of the Viability of Pooled Data SME Credit Scoring in Brazil, Colombia and Mexico.” World Bank mimeo.

Petersen, Mitchell and Raghu Rajan. 1995. “The Effect of Credit Market Competition on Lending Relationships.” Quarterly Journal of Economics 110, 407-43.

Sleuwaegen, Leo and Micheline Goedhuys. 2002. “Growth of Firms in Developing Countries, Evidence from Côte d’Ivoire”. Journal of Development Economics 68, 117-135.

Stiglitz, Joseph. and Andrew Weiss. 1981. “Credit Rationing in Markets with Imperfect Information.” American Economic Review 71, 393-410.

Williamson, Stephen D. 1987. “Costly Monitoring, Loan Contracts and Equilibrium Credit Rationing.” Quarterly Journal of Economics 102, 135-46.

World Bank. 2007. “Access to Finance. Measurement, Impact and Policies.” Policy Research Report, forthcoming.

Zia, Bilal. 2007. “Export Incentives, Financial Constraints, and the (Mis)allocation of Credit: Micro-level Evidence from Subsidized Export Loans.” Journal of Financial Economics, forthcoming.

**Figure 1: The Importance of SMEs across Countries**
This graph shows the share of employees in manufacturing across countries working in enterprises with fewer than 250 employees. Source: Ayaagari, Beck and Demirgüç-Kunt (2007)

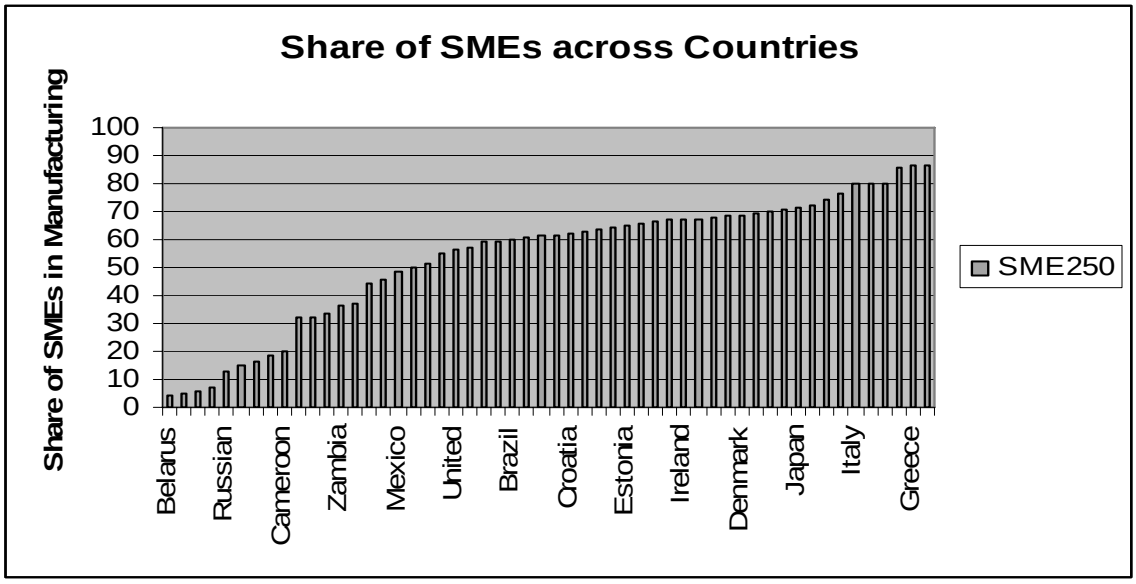


**Figure 2. Italy vs. U.K.: Firm Size at Entry and Over Time**
This graph shows the average value added for firms at entry and over time in Italy and the U.K. Source: Klapper, Rajan and Laeven (2006).

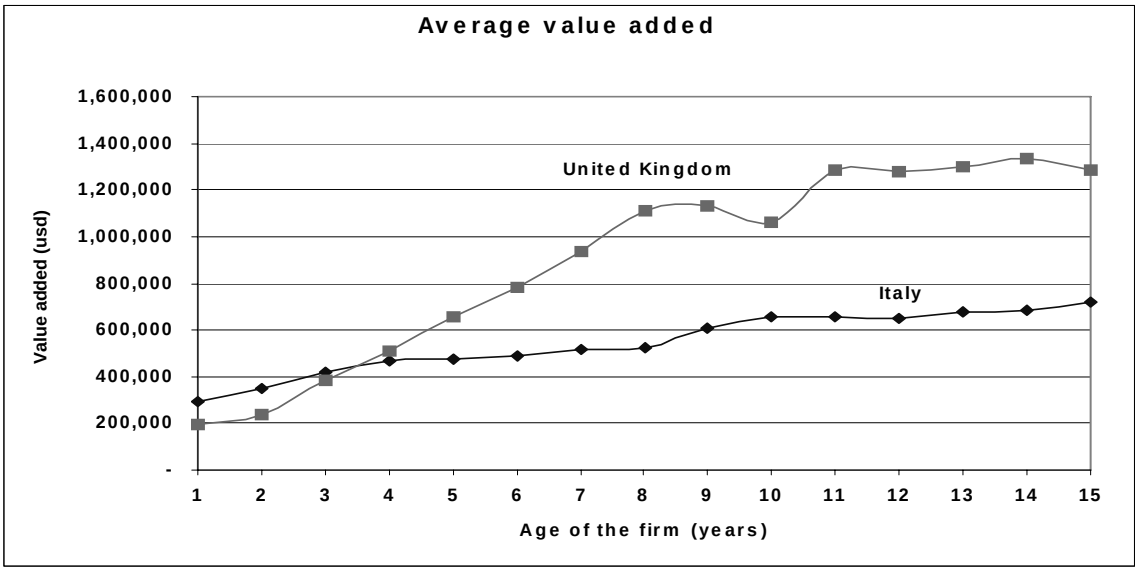

**Figure 3: Growth obstacles reported by small and medium-size enterprises**
This graph shows the proportion of SMEs reporting different aspects of the business environment as major obstacle to their operation and growth. Data are from the Investment Climate Surveys across 71, mostly developing and emerging, economies.

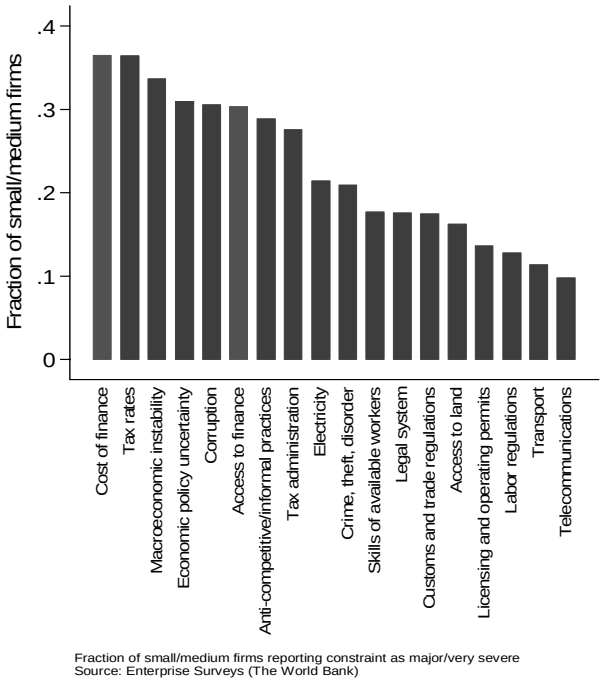


**Figure 4: Financing patterns across firms of different sizes**
This graph shows the share of investment financed from internal finance and different external financing sources. Data are from the Investment Climate Surveys across 71, mostly developing and emerging, economies.

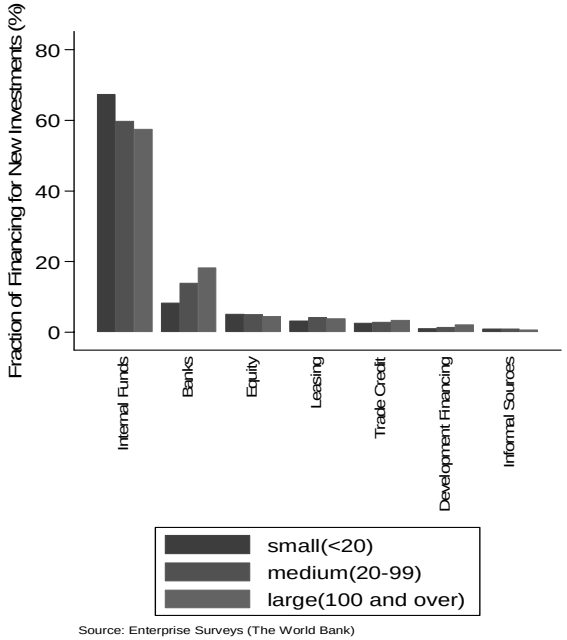

**Figure 5: Use of external financing sources across firms of different sizes**
This figure shows the share of large, medium and small firms that use different financing sources for new investment. Data are from the Investment Climate Surveys across 71, mostly developing and emerging, economies.

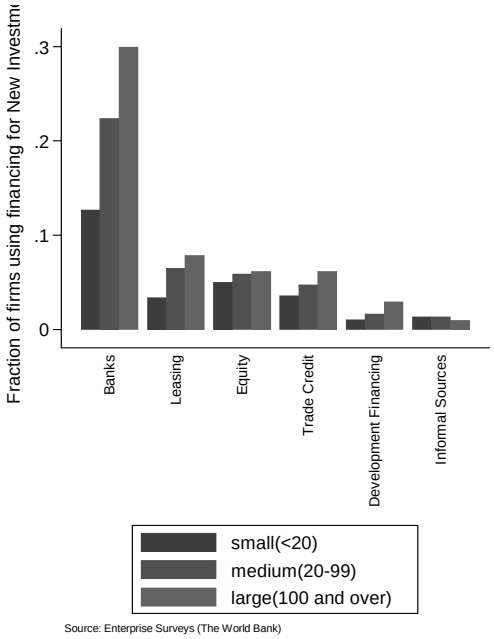


**Figure 6: Growth effects of financing obstacles across firms of different sizes**
This graph shows the effect of different financing obstacles on firm growth for small and large firms. Source: Table 6, Beck, Demirgüç-Kunt and Maksimovic (2005).

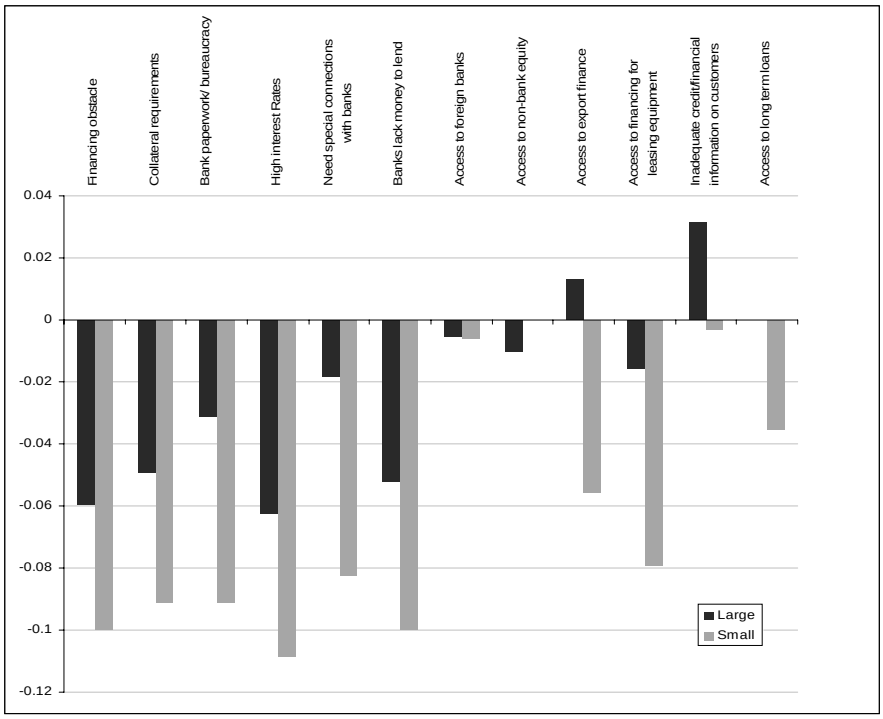

Figure 7: Adverse selection, moral hazard and credit rationing